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# The Impact of the Traditional Method of Procurement on the Estimated Cost and Time Efficiency in Building Construction Projects in Federal Capital Territory (FCT), Abuja, Nigeria

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## Abstract:

Construction projects must be completed on time and under budget through efficient procurement. Construction management literature has often examined how procurement practices affect project performance. Traditional procurement has been criticised as a result. This study examines how conventional procurement methods affect cost estimation and time efficiency in Abuja, Nigeria, building construction projects. A questionnaire and quantitative study were used to collect data. One Hundred and Fifty-Eight (158) questionnaires were administered to the research population, and one hundred and eighteen (118) were retrieved, representing a response rate of 75%. Mean item scores and T-tests were used to analyse importance. All the criteria responsible for the use of traditional methods were deemed moderately significant since they had Mean Scores that were higher than 3.00. The most acceptable benefits associated with the use of the traditional method included checks and balances, which was ranked first and had a Mean Score of 3.28. The impacts of the traditional method of procurement ranged from "optimization of performance metrics including cost and time" (mean = 3.45), which is the highest ranked, to "budget slippage and cost overrun" (mean = 3.05, which is the least ranked). To get the most significant impacts of the traditional method of procurement based on the mean score, a threshold of 3.00 was set. As a result, all the impacts of the traditional method of procurement on the estimated cost and time efficiency of building construction projects were above 3.00 and considered significant. The major recommendation from the study was that to improve the performance of traditional methods of procurement concerning their impact on estimated cost and time efficiency, contracting and consulting firms and all other relevant stakeholders should develop a mechanism that includes all the strategies identified.

**Keywords:** Traditional procurement method, building construction projects, procurement practices, Nigerian construction industry, project delivery

## 1. Introduction

Construction projects contribute significantly to Nigeria's economic growth and development, with Abuja, the capital city, experiencing a rush in infrastructural development and urbanisation. Efficient procurement techniques are crucial in ensuring that construction projects are finished on schedule and under budget. The traditional method is a popular procurement method in Nigeria, particularly for public-sector construction projects. The typical approach of construction procurement involves a sequential process in which the design is first established, then contractors are procured through competitive bidding, and finally, construction begins. While this strategy has been in use for decades, there is rising concern about its impact on the cost and timeliness of Abuja building construction projects (Ogunsanya, Aigbavboa and Thwala, 2021).

Many construction and civil engineering projects of various scopes and difficulty must be completed on time by the construction sector. Construction projects are often called "growth accelerators" or "propellers" of national economic development since construction projects have many positive benefits for the economy. Despite its many benefits, building and civil engineering jobs are poorly performed and delivered (Chan & Chan, 2011; Odeyinka & Yusuf, 2011; Okereke et al., 2021; Shehu, 2021). Time and expense overruns, low efficiency, poor quality, high accident rates, many complaints and conflicts, and stakeholder displeasure are these issues. These challenges are frequently caused by the procurement technique used for project delivery (Ogunsanmi et al., 2012; Olanike, 2020). The procurement system serves clients by architects, design engineers, builders, consultants, and contractors (Molenaar et al., 2012). Construction management, direct labour, design and construction, joint venture, labour-only, project management, alliancing, partnership, and traditional procurement exist (Dada, 2012). According to Ogunsanmi et al. (2012) and Abedin et al. (2021), procurement strategy can make or break a building project. The global building industry uses traditional methods. This technique requires a nearly finished design before construction (Shen, 2013).

Traditional Nigerian construction undertakings are fraught with complications. (Okereke, 2022); Olanike et al. (2020) demonstrated that delays plague Nigerian construction projects. Olanike et al. (2020) discovered that traditional contract procurement underperforms in terms of price and timeliness over time. Construction projects in Abuja, Nigeria, frequently overspend. Delays beset Abuja development projects. Competitive bidding may not necessarily uncover the best vendors in traditional procurement. The study investigates how contractor selection procedures affect project outcomes, such as cost and time efficiency, and exposes shortcomings in selection criteria. In Abuja, a fast-growing city, government agencies, commercial developers, and the general public expect quick and cost-effective project delivery.

### 1.1. Overview of Procurement in Construction

The UN Environmental Programme, or UNEP, defines procurement as the means through which governments and private organizations collaborate to protect the environment and get resources to meet varied demands. Purchases of goods and services are only one aspect of procurement. The procurement process must be prompt, efficient, competitive, open, fair, and productive (UNEP, 2021). The procedure of procuring the essential supplies and labour for constructing a building is referred to as "procurement". Building new structures is the process of efficiently and economically purchasing physical assets like land and buildings, which is known as procurement (Adenuga & Dosumu, 2012).

Culture, governance, management, economics, the environment, politics, and ethics are all considered in the procurement system, as stated by David *et al.* (2009). Ojo and Aina (2010) assert that selecting the appropriate procurement alternatives is essential for executing a construction project since it not only contributes to the project's success but also takes additional factors into account. Zhyzhneuski (2014) argues that the construction sector is notoriously conservative, adhering to tried-and-true business practices, such as the conventional procurement process.

Choosing the best method to oversee the whole construction project execution process may have a significant impact on the final product. For even seasoned buyers, it may be difficult to weigh the pros and cons of each purchase method and make an informed decision (Tookey *et al.*, 2001). Therefore, it is essential to thoroughly examine intricate and constantly changing factors like efficiency, cost certainty, adaptability, responsiveness, flexibility, and other related attributes as part of the procurement selection process (Luu *et al.*, 2003).

To speed up construction projects, many procurement procedures have been developed. The need to maximize performance at every stage of a project's execution is at the heart of modern procurement strategies. The requirements of the clients and the contractors involved, in addition to the technical factors, should be taken into account when choosing a procurement strategy (Alhazmi & McCaffer, 2000). Building project success or failure is significantly influenced by the procurement technique used (Rwelamila *et al.*, 2000). The incorrect selection and application of procurement procedures is one of the main causes of public projects' poor performance when it comes to constructing sustainability.

### 1.2. Different Types of Procurement Methods Used in the Building Construction Industry in Nigeria

Poor procurement choices and the continuous use of outdated guidelines, especially in the public sector, have led to the underperformance of Nigerian construction projects (Oyedele, 2013). Projects in Nigeria's construction industry use a wide variety of procurement strategies, including but not just contracts, Labour Only, partnerships, Direct Labour, joint ventures, and so on (Ogunsanmi, 2012).

After the Public Procurement Act (PPA) was put into effect in Nigeria's construction industry in 2007, stakeholders expected greater results from construction projects (Ekung *et al.*, 2013). According to Ojo & Aina (2010), Nigerian customers and advisers do not follow a set process when choosing the method of purchasing for a project; instead, they rely on the strategy they feel most at ease using. Customers' approaches to purchasing reflect the specifics of their companies' operational settings. The procurement method's design process is a prime suspect in the eyes of Ogunsanmi (2012).

The execution method is secondary to the executor's integrity, authority, and competence, say Mbamali and Okotie (2012). To improve integration and overall project performance, other procurement strategies have been created locally as well. The employment of management contracts, construction management, teamwork, design, and construction are further tactics (Mbamali & Okotie, 2012). Although contract procurement is widely utilized in Nigeria, traditional and non-traditional forms of purchasing are also widely used, as noted by Babatunde *et al.* (2012).

Their research indicates that the anticipated duration and budget for the project should guide the choice of procurement method. The unorthodox method of purchasing supplies helps guarantee high standards. Although this technique for dividing the design and build stages has been considered, it may not apply to all building endeavors. Because of the risks associated with poor communication and coordination, Mohsini *et al.* (1995) argue that typical procurement techniques are inadequate to address the structural issues faced by the construction sector.

According to Rwelamila *et al.* (2000), the traditional approach to construction procurement used in the majority of Sub-Saharan African nations is insufficient for addressing sustainability requirements and construction sustainability. Thus, it is crucial to implement an effective procurement system and to carry out environmental impact analyses prior to any planning or design. To back up this claim, Ekung *et al.* (2013) divide the methods of procurement into three groups: traditional techniques, design-and-build strategies, and management approaches. The three categories are covered one by one in the sections that follow.

### 1.3. Traditional Method of Procurement

Ogunsanmi (2012) asserts that conventional purchasing entails hiring an architect or other consultant before starting a project to handle the project's design, contractors, and client relationships. Every stage, from design to bid to construction, is considered independently. According to Walker & Rowlinson (2008), the majority of contractors and

clients are familiar with traditional procurement techniques, which have frequently turned into industry standards. Oyedele (2013) lists the following as customary procurement practices:

- Direct Labour Method: The client bears all risks, is in charge of cash flow management, and is in charge of finding contractors and qualified labour.
- Design-Bid-Build Method: This is an orderly process where each step always comes after the one before it without a break.
- Selective bidding Method: This innovative method for contrasting contractor bids gives the client access to the property's bill of quantities (BOQ). Contractors will not be considered if their bid is 10% higher or 10% lower than the booking price, which is the BOQ contract sum determined by the client (Oyedele, 2013).

This procurement method has flaws that affect all construction participants. A classic "conflict agreement" involves litigating claims and enforcing rights. This contradiction could cause the project to overspend and be late without benefiting (Samaraweera, 2013). This strategy increases the project's completion time, diminishes the likelihood of construction experience being incorporated into the design, and increases the disparity between the blueprint and the finished result. Walker and Rowlinson (2008) say that the typical strategy puts all parties in an adversarial position when addressing treaty change challenges. Due to the contractor reporting to the main design consultant and not having direct client contact, typical procurement practices often damage relationships.

#### *1.4. Design and Build Method of Procurement (D&B)*

D&B is a procurement approach in which a single entity, often a contractor, is responsible for both the design and construction phases of a project. This method is frequently used because it has the ability to streamline project delivery, eliminate conflicts, and increase cost and time efficiency. The Design and Build process dates back to ancient times when master builders were in charge of both design and building. D&B rose to prominence in the construction sector in the late twentieth century as a result of its promise for speedier project completion and cost savings. Several studies emphasise the benefits of D&B, such as early cost certainty, reduced design-bid-build delays, and the opportunity for project design and construction technique innovation. According to research, D&B can improve communication between the design and construction teams, resulting in better project outcomes (Isa & Anifowoshe, 2023).

##### 1.4.1. Management Contract Method of Procurement

Solid contracts are required to protect commercial and public supply chains. Every year, public entities manage millions of small and large contracts for important goods and services. Contract administration, which is associated with bureaucracy, disagreements, litigation, and fines for unfulfilled contractual duties, is sometimes overlooked by procurement agencies. Ensuring ethical taxpayer spending and effective public service delivery, public procurement, and supply chain management must be efficient and effective. Due to simplified perspectives, limited procurement labour availability, and contract management administrative issues, many public institutions have been hammered by the perfect storm. They have not always been able to implement public contracting policies and best practices (Patrucco & Diamand, 2023).

Contract management is frequently overlooked and under-resourced in comparison to other supply chain processes. This exposes businesses to the risk of a decline in supply quality and disruption. Contract Administration in the Supply Chain Supply chains are networks of individuals and companies that manufacture and deliver goods and services to customers. The network connections begin with raw material producers and terminate with end consumers who get finished goods and services. Designing and executing administrative and operational methods to manage the entire manufacturing flow for products and services, from raw materials and components to customer delivery, is what supply chain management entails (Bako, 2016). The public sector supply chain is a network of contractors and subcontractors who supply things and services to public entities in order for them to provide services to residents. Supply chain management and procurement management may overlap. Procurement is defined by the Institute of Public Procurement (NIGP) as the function/department/agency that purchases, rents, leases, or otherwise obtains items, services, or construction. It entails defining requirements, identifying and soliciting supply sources, creating and awarding contracts, and managing contracts (Patrucco & Diamand, 2023).

## **2. Methodology**

This study will look into the impact of the traditional procurement approach on cost estimation and time efficiency in construction projects in Abuja, Nigeria. A quantitative research strategy and a survey-based methodology will be used in this investigation. Kimmons (2022) defines quantitative research as the collection of numerical data for justifiable analysis. To give this information, Abuja construction experts will be required to complete a questionnaire. This study's research strategy is divided into five distinct phases. The first stage entails researching relevant material to get an understanding of traditional procurement processes. Following that, the major goal is to design questionnaires for distribution among Abuja's building experts. Data collection refers to the phase of research data collection. Following that, the data analysis and discussion processes involve reviewing the collected data, comparing the results to existing literature, and debating the findings. The final step in this study is to develop conclusions and make recommendations based on the research findings.

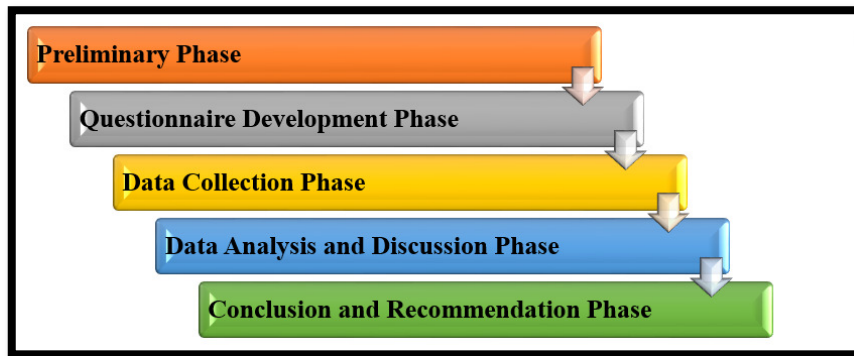


Figure 1: Research Design Phases

### 2.1. Research Population

The research population comprises experts from the building construction and consulting industries in Abuja. The study's population was gathered from a list of these professions in the Federal Inland Revenue Service's (FIRS) database. This database was judged credible since it contains professionals who file their taxes on a regular basis and appear to be active in their field. The database discovered 270 professionals who have their tax clearance up to date, indicating that they are professionally engaged or have mastered their practice responsibilities. These are the specialists whose major focus is on specific statistics rather than general statistics.

### 2.2. Instrument for Collecting Data

According to Ojo (2003), research instruments are tools used to collect data for a study to test hypotheses and answer research questions. The employment of a questionnaire as a research technique assures the collection of the intended respondent's viewpoint. The surveys were given to Abuja-based construction experts who are extremely active in their trade. The questionnaire was divided into five sections and was designed to collect demographic information as well as information relevant to the study's objectives.

- Section A contains demographic information on respondents, whereas the other sections include information about the variables of interest.
- Section B: To determine the factors that influence the usage of traditional procurement methods over alternative types.
- Section C: To investigate the advantages and disadvantages of using the conventional way of procurement in contrast to alternative kinds of procurement.
- Section D: To determine the substantial influence of the traditional procurement technique on the estimated cost and timeliness of building construction projects.
- Section E: To develop mitigation solutions to enhance the performance of traditional procurement processes.

## 3. Data Analysis Method

The acquired data was displayed and analysed in Microsoft Excel 2016 and the IBM Statistical Package for Social Sciences (SPSS) version 25, utilising descriptive techniques. The results of this study will be provided in the form of tables and graphs.

### 3.1. Results

Table 1 provides an overview of the procedures related to data preparation and reliability assessment. A total of 153 questionnaires were distributed to the research population, with 118 returned, yielding a response rate of 77.1%. Subsequently, the collected data was imported into SPSS for analysis, focusing on evaluating its reliability. The primary objective of the reliability test was to gauge the internal consistency and reliability of the entire research dataset. In general, the reliability, as indicated by the Cronbach Alpha coefficient for the complete dataset (0.947), can be deemed good since it surpasses the threshold of 0.500.

Total Responses			Cronbach Alpha
Sent	Received	Response Rate	
158	118	75%	0.947

Table 1: Summary of Data Preparation and Reliability

### 3.2. Demographic Characteristics

Table 2 presents an overview of the demographic characteristics of the survey participants. In terms of their professional backgrounds, architects constituted the largest group at 52.5%, followed by quantity surveyors at 18.6%, civil and structural engineers at 11.9%, project managers at 9.3%, builders at 4.2%, and a smaller minority of mechanical and

electrical engineers at 3.4%. This distribution effectively represents the predominant professions within the Nigerian construction industry.

Regarding the organizational affiliations of the respondents, 52.5% were affiliated with consulting organizations, 43.2% with contracting organizations, and a smaller fraction of 4.2% fell into the category of academicians.

With regard to years of professional experience, 22.9% reported having 1–5 years of experience, 21.2% had 5–10 years, 25.4% had 10–15 years, 18.6% had 15–20 years, and 11.9% had over 20 years of experience. This suggests that the participants possess significant and diverse experience levels, making them valuable sources of information for this research.

In terms of the procurement methods commonly utilized by the respondents, 39.8% favoured the traditional method, 31.4% preferred the design-and-build (Turnkey) approach, 17.8% opted for construction management and 11.0% utilized management contracts. This indicates that the predominant procurement methods within the respondents' organizations were traditional methods and design-and-build (Turnkey).

	<b>Variables</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Professional Background	Architects	62	52.5
	Estimation professionals	22	18.6
	Construction experts	5	4.2
	Civil and structural engineers	14	11.9
	Project management specialists	11	9.3
	Mechanical and electrical engineers	4	3.4
	Total	118	100.0
Organization Categories	Consultant	62	52.5
	Contractor	51	43.2
	Others (State below)	5	4.2
	Total	118	100.0
Years of Experience	1-5 Years	27	22.9
	5-10 Years	25	21.2
	10-15 Years	30	25.4
	15-20 Years	22	18.6
	Above 20 Years	14	11.9
Total	118	100.0	
Procurement Methods	Conventional approach	47	39.8
	Design-build (Turnkey)	37	31.4
	Contracted management	13	11.0
	Construction oversight	21	17.8
	Total	118	100.0

*Table 2: Demographic Characteristics of Respondents*

### *3.3. Criteria Responsible for the Use of Traditional Methods of Procurement over Other Types in the Building Construction Industry*

This section is dedicated to analyzing data related to the first objective of the study, which aimed to identify the factors contributing to the preference for the traditional procurement method over other alternatives. We computed the mean scores for a set of statements pertaining to the factors influencing the choice of the traditional method, along with their standard deviations. These scores were then used to rank the survey responses, allowing us to determine the most influential factors behind the adoption of traditional procurement methods within the building construction industry. The outcomes of this analysis are presented in table 3. According to the analysis of survey data, the top three factors responsible for the preference of traditional methods were 'construction time (schedule)' and 'capital cost of the project (budget),' both ranking 1st with a Mean Score of 4.05 each. The third most significant factor was 'financial risk,' which received a Mean Score of 3.86. Following closely, the fourth-ranked factor was the 'quality level of a construction project,' with a Mean Score of 3.82. Notably, all other factors were considered moderately significant, as they garnered Mean Scores exceeding 3.50.

S.N	Criteria Responsible for the Use of Traditional Methods	Mean Score	SD	RII	Rank	Level of Significant
1	Construction time (Schedule)	4.05	1.18	0.81	1st	Moderately Significant
2	The capital cost of the project (Budget)	4.05	1.10	0.81	1 <sup>st</sup>	Moderately Significant
3	Financial risk	3.86	1.15	0.77	3 <sup>rd</sup>	Moderately Significant
4	The quality level of a construction project	3.82	1.11	0.76	4 <sup>th</sup>	Moderately Significant
5	Project manager's knowledge and experience	3.80	1.11	0.76	5 <sup>th</sup>	Moderately Significant
6	Project Characteristics (Complex, Originality, Location, Size)	3.79	1.27	0.75	6 <sup>th</sup>	Moderately Significant
7	Project External Criteria (Commercial, Political, Economic, Social, Legal, and Technological)	3.78	1.25	0.75	7 <sup>th</sup>	Moderately Significant
8	Conditions of contract	3.66	1.12	0.73	8 <sup>th</sup>	Moderately Significant
9	Adequacy of contractor resources	3.61	1.00	0.72	9 <sup>th</sup>	Moderately Significant
10	Risk Avoidance	3.60	1.14	0.72	10 <sup>th</sup>	Moderately Significant
	Client's Criteria (Experience and Objective)	3.42	1.12	0.77	11 <sup>th</sup>	Somewhat Significant

Table 3: Criteria Responsible for the Use of Traditional Methods

### 3.4. Determine the Significant Impact of the Traditional Method of Procurement on Building Construction Project Estimated Costs and Time Efficiency

Table 4 displays the ranking of the five effects of the conventional procurement approach on estimated cost and time efficiency in building construction projects, ordered by mean scores in a descending manner. It also indicates that the majority of three out of the five hypothesized effects are considered statistically significant ( $p < 0.05$ ) by the survey participants, as determined by a one-sample t-test value of 3.0. The mean scores for these effects range between 3.45 and 3.05. These impacts of the traditional procurement method vary from the highest-ranked "Optimization of performance metrics, including cost and time" (mean = 3.45; SD = 1.18;  $t(117) = 4.13$ ;  $p = 0.00 < 0.64$ ) to the lowest-ranked "budget slippage and cost overrun" (mean = 3.05; SD = 1.11;  $t(117) = 0.49$ ;  $p = 0.62$ ).

To identify the most significant impacts of the traditional procurement method based on mean scores, a threshold of 3.00 was established. Consequently, all the impacts of the traditional procurement method on the estimated cost and time efficiency of building construction projects exceeded 3.00 and were deemed significant. These impacts of the traditional procurement method encompass "Optimization of performance metrics, including cost and time" (mean = 3.45; SD = 1.18;  $t(117) = 4.13$ ;  $p = 0.64$ ), "Providing greater price certainty to the client" (mean = 3.40; SD = 1.10;  $t(117) = 4.00$ ;  $p = 0.00$ ), "Delay in delivery and time overrun" (mean = 3.27; SD = 1.05;  $t(117) = 2.88$ ;  $p = 0.01$ ), "Increasing construction waste, thereby raising project costs" (mean = 3.16; SD = 1.05;  $t(117) = 1.82$ ;  $p = 0.07$ ), and "Budget slippage and cost overrun" (mean = 3.05; SD = 1.11;  $t(117) = 0.49$ ;  $p = 0.62$ ). This analysis identified a total of three significant impacts of the traditional procurement method on the estimated cost and time efficiency of building construction projects.

S/N	Impact of the Traditional Method	MS	SD	t-value ( $\mu = 3.0$ )	df	Sig. (2-tailed)	R
SITM4	Modification of performance indicators, such as time and cost	3.45	1.18	4.13	117	0.00*	1
SITM1	Increases the customer's price certainty	3.40	1.10	4.00	117	0.00*	2
SITM3	Time overrun and delivery delay.	3.27	1.05	2.88	117	0.01*	3
SITM5	Increased construction waste leads to higher project costs.	3.16	0.96	1.82	117	0.07	4
SITM2	Cost overruns and budget slipping.	3.05	1.11	0.49	117	0.62	5

Table 4: The Effect of the Traditional Procurement Method on the Estimated Cost and Time Efficiency of Building Construction Projects

## 4. Discussion

This research investigates the reasons behind the preference for traditional procurement. The findings indicate that all criteria examined had a moderate level of significance. This outcome aligns with the studies by Sithy Safeena et al. (2020), Ajayi et al. (2016), and Morledge et al. (2006), all of which evaluated traditional procurement using the same criteria. Key academic concerns revolve around the scheduled construction duration, project capital cost, and financial risk. Additionally, the quality of a building project is influenced by the skills and experience of the project manager.

In this study, a comparison is made between the advantages and disadvantages of traditional procurement and alternative methods. Traditional procurement stands out due to its robust checks and balances and its ability to deliver high-quality work, setting it apart from other procurement approaches. Stephen et al. (2006) also emphasized the importance of quality control in traditional procurement, recommending the use of working drawings and specifications as the foundation for the client-contractor agreement to ensure project quality. The findings of this study align with Wahab (2007) and echo the challenges associated with traditional procurement observed by Chang and Ive (2002), McDermot (2009), and Hackett et al. (2007), including time inefficiency, fragmented organizational interfaces, conflicts among stakeholders, limited contractor design input, and cost uncertainty.

This study underscores the impact of the traditional procurement system on the anticipated cost and time efficiency of building projects, supporting the assertions made by Aftab et al. (2012). The authors argue that this procurement method often leads to project failures, resulting in delays and cost overruns. According to Kariska et al. (2022), project success is contingent on meeting technical goals, adhering to deadlines, and staying within budget. The choice of procurement method significantly influences both building costs and project timelines. Awolesi et al. (2015) propose that effective monitoring and control, appropriate construction techniques, and collaborative efforts among stakeholders can mitigate the adverse effects of traditional procurement on cost and time overruns during the design and construction phases. Implementing these solutions is essential for enhancing the expected cost and time efficiency of traditional procurement procedures.

## 5. Conclusion

The practices of procurement play a vital role in the success and expansion of projects. Crafting an effective project procurement strategy necessitates careful thought and time investment. Regrettably, certain procurement strategies have fallen short of achieving project cost, schedule, and quality objectives. In the Nigerian construction industry, challenges related to cost and time overruns have persisted, and previous solutions have proven inadequate. In light of this, this study critically examines the impact of traditional procurement on the anticipated cost and time efficiency of building construction projects in Abuja, Nigeria. Primary data was collected from 118 building professionals in Abuja using a questionnaire. Analysis of the data was carried out through descriptive methods, such as charts and tables, as well as inferential statistics, including t-tests.

The survey revealed that respondents' companies employ both traditional and design-build procurement methods. Analysis of the survey data highlighted that construction time (schedule) and project capital cost (budget) were the primary factors influencing the choice of traditional methods. As per the survey findings, the most significant advantages of traditional procurement, as reported by respondents, were its checks and balances in comparison to other methods. In contrast, survey data indicated that the greatest challenge associated with the use of traditional procurement, as compared to alternative procurement approaches, was the fragmentation of organizational interfaces. A threshold of 3.00 was applied to identify the most significant impacts of traditional procurement on the estimated cost and time efficiency of building construction projects based on the mean scores. Consequently, all typical impacts of procurement on the cost and time efficiency of building construction projects exceeded 3.00 and were deemed significant. Ultimately, this study concluded that proficient professionals should estimate project costs and time durations to enhance the performance of traditional procurement methods in terms of estimated cost and time efficiency.

## 6. Recommendation

This study recommends the following recommendations to improve traditional procurement systems' predicted cost and time efficiency:

- The research proposes that construction companies tackle issues like organizational interface fragmentation, time inefficiency, and conflicts among the client, consultant, and contractor to improve the effectiveness of traditional procurement methods.
- In order to boost the cost and time efficiency of traditional procurement methods, it is recommended that contracting and consulting firms, stakeholders, and relevant parties establish a comprehensive mechanism encompassing all the strategies mentioned.
- To mitigate the influence of outdated systems, this study recommends the adoption of contemporary digital and intelligent procurement approaches.
- Adequate monitoring and control systems, appropriate building techniques, and coordinated efforts among stakeholders are all required to reduce the negative effects of traditional procurement procedures on cost and schedule overruns.

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